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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Serial No. : 10/784,459 Confirmation No. 8229

Applicants : Allan Charles Webb, et al.

Filed : February 23, 2004

Title : COMPONENT ASSEMBLY WITH FORMED  
SPINDLE END PORTION

Art Unit : 3682

Last Office Action : October 16, 2006

Examiner : Lenard A. Footland "Express Mail" Mailing Label No. EV520395822US

Attorney Docket No. : 626220510021 Date of Deposit December 18, 2006

**TRANSMITTAL OF REPLY BRIEF**

**Mail Stop Appeal Brief - Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Patents, P.O. Box 1450, Alexandria, VA  
22313-1450

By H. Duane Switzer

Sir:

The attached reply brief, filed in triplicate, responds to the Examiner's Answer dated

October 16, 2006.

Respectfully submitted,

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Date: Dec. 18, 2006



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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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**APPLICANTS' REPLY BRIEF**

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By H. Duane Switzer

**Mail Stop Appeal Brief - Patents**  
Commissioner for Patents  
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Alexandria, VA 22313-1450

Sir:

**The Rejection Under 35 U.S.C. §112, ¶2**

The rejection under 35 U.S.C. §112, ¶2 is both unnecessary and inappropriate. The rejection concerns recitations of characteristics of the spindle in both the preamble of the claims and in the body of the claims. The claim recitations related to the spindle are referred to by the Examiner as recitations of a "perform," although none of the claims use the term "perform."

Whether preamble statements limit structure is discussed in MPEP §2111.02, and especially 211.02(I). While there is no litmus test for determining whether language in the preamble of a claim limits that claim, there are guidelines for making the determination. In general, preamble language is read as a claim limitation when: (a) it recites structure or steps that are essential or underscored as important by the specification; (b) it is used by the claim drafter to define the subject matter of the claimed invention; (c) it is relied upon for antecedent basis; (d) it is essential to understand limitations or terms in the body of the claim; (e) it is necessary to give life, meaning and vitality to the claim; (f) it is part of a Jepson claim; or (g) it is relied upon during prosecution to distinguish the claimed invention from the prior art.

On the other hand, preamble language does not limit a claim if: (a) it is only used to state a purpose or intended use for the invention and the claim body otherwise defines a structurally complete invention such that deletion of the preamble language does not affect the structure or steps of the claimed invention; or (b) it merely extols benefits, features or intended uses of the claimed invention that are not clearly and unmistakably relied on as being patentably significant.

Functional limitations are discussed in MPEP §2173.05(g), the last paragraph of which provides: “In a claim that was directed to a kit of component parts capable of being assembled, the Court held that limitations such as ‘members adapted to be positioned’ and ‘portions...being resiliently dilatable whereby said housing may be slidably positioned’ serve to precisely define present structural attributes of interrelated component parts of the claimed assembly.”

The configuration of the spindle prior to deformation thereof is indicated to be important in lines 10-19 on page 14 of the specification as follows:

“The configuration of the extended portion 71 of the pre-form 70, the distance it projects beyond the back face 32 of the inboard cone 26, and [the] advance imparted to the table 92 by the ram 98 are all such that the formed end 20 does not deform the inboard cone 26

or impart excessive preload to the bearing 6. For example, if the end portion 71 of the pre-form 70 extends too far beyond the back face 32 of the inboard cone 26 or otherwise contains excessive material in that region, the space between the forming tool and the cone back face 32 cannot accommodate all of the material, and the inboard cone 26 undergoes distortion in the region of its thrust rib 30 and raceway 28.”

Characteristics of the spindle before it is deformed also are discussed beginning in line 24 on page 8 and continuing through line 19 on page 9; and beginning in line 22 on page 12 and continuing through line 17 on page 13.

The rejection under 35 U.S.C. §112, ¶2 is unnecessary because the above guidelines can be used to determine whether the recitations of the spindle characteristics do or do not limit the claims. Using the guidelines to make that decision one way or the other makes the rejection under 35 U.S.C. §112, ¶2 completely unnecessary. Refusing to make that decision on grounds that it cannot be done, and instead falling back on a rejection under 35 U.S.C. §112 is not appropriate.

The rejection under 35 U.S.C. §112, ¶2 also is inappropriate because one making proper use of the above guidelines can only arrive at the inescapable conclusion that the recitations of the spindle characteristics are proper and do limit the claims. The recitations complained of by the Examiner are indicated to be important in the specification; are used by the claim drafter to define the subject matter of the claimed invention; are relied on for antecedent basis; are essential to understand limitations or terms in the body of the claims; are necessary to give life, meaning and vitality to the claims; and have been relied upon during prosecution to distinguish the claimed invention from the prior art.

Pages 11 and 12 of the Appeal Brief explain that it has long been the practice in this art to claim characteristics of both the original and final configurations of a spindle that is deformed to secure a component on the spindle. See Hofmann et al 5,490,732, claim 1 in lines 1-6 at the top

of column 4, and claims 4 and 5. Page 11 of the Appeal Brief notes that the same Examiner that is examining the present application also examined U.S. Patent No. 6,113,279 to Sawai et al, and that patent includes extensive recitations in claims 1, 3, 4 and 5 of a spindle shape prior to deformation thereof, along with functional language of how it is deformed. Furthermore, allowed claims in this application and related applications include the same type of recitations.

The Examiner's argument on page 7 of the Examiner's Answer that the language of the intermediate product is so extensive and commingled with final product language that it renders the claims incomprehensible is not well taken. The claims are very easy to follow and understand when carefully read with reference to the drawing by using the reference numbers provided in the claims. The contention that the claims are incomprehensible is unsupportable and has no basis in fact.

The disclosure makes it plain that the original or perform configuration of the deformable spindle end portion is important for producing a novel and unobvious formed end with improved characteristics that minimize the possibility of distorting the component that is secured on the spindle, and to minimize the possibility that the formed end will fracture or develop cracks.

Reference numbers were added to the claims in response to repeated rejections under 35 U.S.C. §112 on grounds that it was not possible to determine the meaning of numerous recitations or where those recitations could be found in the drawing. In some instances, there are no specific reference numbers to be used, and brief explanations are inserted. For example, in lines 12-14 of claim 61, there is an explanation in parenthesis that the decrease in radial thickness that is being claimed is "(between outer surface 71a and inner surface 72, 74)." The Examiner contends that this is improper and indefinite because one cannot tell whether it is part of the claim or a claim limitation. Because of the insertion of reference numbers to the claims,

persons of ordinary skill in the art clearly would recognize the explanatory note in parenthesis to be just that, the same as the explanatory numbers in parenthesis. The rejection on grounds that this explanatory note in parenthesis is improper and indefinite is not well taken.

### **The Rejection Under 35 U.S.C. §102(e)**

The principal novel and unobvious features of the claims are discussed on pages 13-17 of applicants' Appeal Brief, and the Examiner has not shown that those features are disclosed or taught by U. S. Patent No. 5,490,732 to Hofmann et al to support the rejection of the claims under 35 U.S.C. §102(e).

Claim 61 recites the formed end 20 in FIG. 3 as having a peripheral outside corner 64 located closely adjacent the outer face 32 of the component 26. See that recitation of claim 61 in the first two lines at the top of page 19 of applicants' Appeal Brief. The marked up copy of FIG. 3 of Hofmann et al that is attached to the Examiner's Answer indicates that the Examiner construes Hofmann et al as having the claimed peripheral outside corner at a location just below number 9 on the axially facing outer surface of the formed end. This location is not "closely adjacent" the outer face of the component 3 in Hofmann et al, and that location is not a peripheral outside corner of a formed end.

The claim recitation of a peripheral outside corner located *closely adjacent* the outer face of the component cannot be construed to read on a spot on an axially facing surface of the formed end in Hofmann et al that is about as remote as possible from the outer face of the component 3. If one properly uses the actual peripheral outside corner of the formed end in Hofmann et al that is adjacent the outer face of the component 3, the remaining recitations of the claim cannot be read on Hofmann et al.

Claim 61 also recites the spindle as having an inner beveled surface 68 that is inclined inwardly toward the spindle rotational axis from the deformable annular end portion 71. (lines 8 and 9 of claim 61 on page 18 of the Appeal Brief – see both FIGS. 3 and 4). The Examiner construes the inclined surface of the formed end in Hofmann et al near the angle  $\beta$  as reading on this recitation. However, the claimed beveled surface 68 is not a part of the formed end 20 or of the deformable end portion 71, whereas the surface relied on by the Examiner in Hofmann et al is part of the formed end and is not even present in the deformable end portion because the inclination is produced by outward deformation of the original straight barrel.

The disclosure in Hofmann et al leaves much to be desired. The dimension S in FIG. 3 clearly is in the wrong location and should be moved upwardly to indicate the thickness of the deformable end portion or hub barrel before it is deformed. While patent drawings are not to scale, the degree to which dimensions in FIG. 3 of Hofmann et al are distorted is remarkable. The axial thickness or height H of the formed end in FIG. 3 of Hofmann et al is disclosed to be 5 mm in line 21 of column 3, and is recited in claim 1 at line 20 of column 4 as being 4.0-6.0 mm. The length L of the hub barrel 10 is disclosed to be 12 mm in line 14 of column 3. The number 10 is used five times in columns 2 and 3 to refer to the hub barrel, but does not appear in the drawing. From the disclosure, it is apparent that the length L and the thickness S refer to the length and thickness of the hub barrel before it is deformed outwardly.

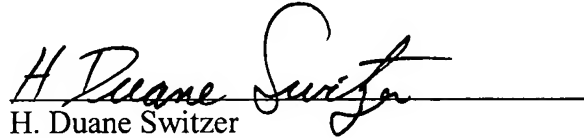
In FIG. 3 of Hofmann et al, the dimension L is shown to be about 1.4 times the axial thickness H of the formed end, where as the disclosure indicates that the dimension L is at least two times the axial thickness H. (Dimension L of 12 mm and H of 5 mm as disclosed or 4-6 mm as claimed).

It is plain that Hofmann et al does not disclose or suggest the novel and unobvious features that are recited in the appealed claims.

The principal novel and unobvious features of the claims other than claim 61 are noted on pages 14-17 of the Appeal Brief. The other claims recite additional features or features that are not the same as those recited in claim 61, and there has been no showing that such features are disclosed or taught by Hofmann et al.

The claim rejections under 35 U.S.C. §112, ¶2 and 35 U.S.C. §102(e) are not sustainable and should be reversed.

Respectfully submitted,

A handwritten signature in cursive script, reading "H. Duane Switzer", is written over a horizontal line.

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